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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,732	03/24/2004	Hoang Nguyen	509232001900	5619

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EXAMINER	
RODRIGUEZ, ARMANDO	

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/808,732	NGUYEN ET AL.	
	Examiner	Art Unit	
	ARMANDO RODRIGUEZ	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) *34-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-28 and 30-33* is/are rejected.

7)☒ Claim(s) *6 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7-7-2006, 3-24-2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I in the reply filed on July 20, 2006 is acknowledged. No arguments for the traversal have been submitted. The requirement is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7, 8, 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Jerman et al (US 6,847,661).

Regarding claims 1, 3, 7,

Jerman et al illustrates in figure 10 a tunable laser including a laser source (502) [applicant's gain medium], a diffraction grating (504), a reflector mirror (506) [applicant's retroreflector] and microactuator (507), which can be coupled to the diffraction grating or reflector mirror for adjusting the wavelength [applicant's distance], column 14 lines 3-11.

Regarding claim 2,

Column 14 lines 56-59 discloses the laser (502) similar to laser source (101) of figure 1, which includes a laser diode with an antireflection coating, column 5 lines 10-17.

Regarding claim 8,

Column 24 lines 7-14 discloses the use of wavelength lockers for monitoring the wavelength, which implies the use of a detector. Column 23 lines 50-53 discloses the use of PSD [applicant's feedback] for monitoring the wavelength.

Regarding claim 12,

Figure 10 illustrates a lens (503) [applicant's pick-off] disposed between the laser source and the diffraction grating.

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,4,13-15,23,24,26,27, 30-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Anthon et al (US 6,912,235).

Regarding claims 1, 4, 13-15, 23, 26, 27, 30,

Figure 2 illustrates a tunable laser having a gain medium (21), a diffraction grating (35), a retroreflector (37), where piezoelectric adjust the distance between the gain medium and the diffraction grating.

Regarding claim 24,

Figure 2 illustrates an actuator (41) coupled to the retroreflector.

Regarding claims 31, 32,

Figure 2 illustrates a detectors (24), (52) and (61), which form a feedback loop.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 20-22, 25, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthon et al (US 6,912,235) in view of Suganuma et al (US 20020012377).

Regarding claims 5, 20-22, 25, 28,

Anthon et al does not explicitly disclose the actuators as a piezoelectric actuator or a voice coil actuator.

Suganuma et al discloses in paragraph [0092] the use actuators such as piezoelectric actuators and voice coil motors, within a laser system.

Therefore, it would have been obvious to a person having ordinary skill in the art to combine the actuators described by Suganuma et al with the tunable laser of Anthon et al because it will allow for movement of optical elements to a desired position in accordance with feedback signals, paragraph [0092] of Suganuma et al.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthon et al (US 6,912,235) in view of Clark et al (US 5,923,418).

Regarding claims 9, 10 and 11,

Anthon et al is silent as the use of a quadrant detector.

Clark et al discloses in column 1 lines 50-59, of known commercial systems using quadrant detector for determining the position of the laser beam.

Therefore, it would have been obvious to a person of ordinary skill in the art to combine the well known quadrant detector as described by Clark et al with tunable laser of Anthon et al because it would provide feedback of the laser beam in accordance to the position of the optical elements.

Furthermore, quadrant detectors inherently provide phase measurement.

Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anthon et al (US 6,912,235) in view of Jerman et al (US 6,847,661).

Regarding claims 16-19,

Anthon et al is silent as to the encoder for measuring the position of the retroreflector.

However, it is well known to use position sensor detectors for determining the position of optical elements as described in column 24 lines 3-6 of Jerman et al, which discloses determining the position of the actuator and the reflector by using a position sensor detector (PSD). Column 14 lines 3-11 discloses coupling the actuator to the reflector or the diffraction grating.

Therefore, it would have been obvious to combine the teachings of the PSD as described by Jerman et al to the tunable laser of Anthon et al because it will allow to

determine the position of the actuator as a function of desired wavelength, column 23 lines 1-3 of Jerman et al.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anthon et al (US 6,912,235) in view of Jerman et al (US 6,847,661) and Suganuma et al (US 20020012377).

. Figure 2 illustrates a tunable laser having a gain medium (21), a diffraction grating (35), a retroreflector (37) with an actuator, where piezoelectric adjust the distance between the gain medium and the diffraction grating. Figure 2 illustrates a detectors (24), (52) and (61), which form a feedback loop.

Anthon et al does not explicitly disclose the actuators as a piezoelectric actuator or a voice coil actuator.

Suganuma et al discloses in paragraph [0092] the use actuators such as piezoelectric actuators and voice coil motors, within a laser system.

Therefore, it would have been obvious to a person having ordinary skill in the art to combine the actuators described by Suganuma et al with the tunable laser of Anthon et al because it will allow for movement of optical elements to a desired position in accordance with feedback signals, paragraph [0092] of Suganuma et al.

Anthon et al is silent as to the encoder for measuring the position of the retroreflector.

However, it is well known to use position sensor detectors for determining the position of optical elements as described in column 24 lines 3-6 of Jerman et al, which

discloses determining the position of the actuator and the reflector by using a position sensor detector (PSD). Column 14 lines 3-11 discloses coupling the actuator to the reflector or the diffraction grating.

Therefore, it would have been obvious to combine the teachings of the PSD as described by Jerman et al to the tunable laser of Anthon et al because it will allow to determine the position of the actuator as a function of desired wavelength, column 23 lines 1-3 of Jerman et al.

Allowable Subject Matter

Claims 6 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARMANDO RODRIGUEZ
Primary Examiner
Art Unit 2828

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